

### **REMARKS**

Applicant submits the present *Amendment* in response to the Office Action mailed November 12, 2008. Applicant sincerely appreciates the thorough review of the present application, as well as the withdrawal of the previously pending rejections. In response to the Office Action, Applicant has amended Claim 16 to include the recitations of Claim 19, and has cancelled Claims 19 and 28-30. For the reasons discussed below, Applicant respectfully submits that the remaining claims are all in condition for allowance.

#### **I. The Rejections Under 35 U.S.C. § 103**

Claims 1-27 and 29-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,580,704 to Wellig et al. ("Wellig") in view of U.S. Patent No. 5,666,661 to Grube et al. ("Grube") and U.S. Patent No. 7,000,015 to Moore et al. ("Moore"). As noted above, Applicant has cancelled Claims 19 and 29-30, thereby mooted the rejections of those claims. Applicant respectfully traverses the rejections of the remaining claims for the reasons discussed below.

##### **A. The Claimed Invention and the Cited References**

Before turning to the claim rejections, some general comments on the claimed invention and the cited references is helpful.

Independent Claims 1, 16 and 24 remain pending in the present case. Each of these claims are directed to methods or systems in which a first distance between a first station and a second station is determined, a second distance between the first station and an access point (AP) is determined, and **the first distance and the second distance are compared to each other**. If the first distance is smaller than the second distance, a direct link protocol is established between the first station and the second station to perform communication; otherwise, communication is performed via the access point.

In contrast, Wellig is directed to measuring **a distance between a first mobile terminal MT1 and a second mobile terminal MT2** based on a measurement of a signal strength between a first mobile terminal MT1 and a second mobile terminal MT2. Then, the measured distance is **used to determine a topology** between an access point and the first and second mobile terminals MT1 and MT2. (See Wellig at Col. 2, lines 23-27).

Moore fails to cure the shortcomings of Wellig. In particular, Moore teaches collecting information about the physical position of a corresponding computer, then determining optimum information from the collected information, and using this optimum information to determine **a network to which the corresponding computer is physically connected** from among a plurality of networks.

Grube likewise fails to cure the shortcomings of Wellig and Moore. In Grube, **a distance between two communication units 102 and 103 and a predetermined threshold are compared to each other**, and if the distance is smaller than the threshold, the two communication units 102 and 103 are directly connected to each other. However, Grube does not disclose how to determine the threshold.

Thus, as described above, the cited references, either alone or in combination, fail to teach or suggest comparing the first distance and the second distance as is recited in the pending claims.

B. **Independent Claim 1**

Independent Claim 1 recites:

1. A method of establishing communications between a first station and a second station in a wireless local area network using a direct link protocol, comprising:

- determining a first distance between the first station and the second station;
- determining a second distance between the first station and an access point in the wireless local area network;
- comparing the first distance to the second distance; and
- establishing direct link protocol communications between the first station and the second station if the first distance is less than the second distance.

Wellig is cited as the primary reference in the rejection of Claim 1 under 35 U.S.C. § 103(a). (Office Action at 3). The Office Action concedes, however, that Wellig does **not** disclose (1) determining a second distance between the first station and the access point, (2) comparing the first distance to the second distance, or (3) establishing direct link protocol communications between the first station and the second station if the first distance is less than the second distance. (Office Action at 3).

In order to overcome the shortcomings of Wellig, the Office Action cites to Grube as disclosing establishing direct mode communications between a first station and a second station based on a comparison of the distance between the stations and a **threshold**. (Office Action at 3). The Office Action further relies on Moore as disclosing determining a second distance between the first station and an access point. (Office Action at 3). Finally, the Office Action states that one of skill in the art would have been motivated to modify Wellig to compare the distance between the first and second stations with a threshold, as disclosed in Grube, and then to further modify this modified method based on Moore to set the threshold based on a determined distance between the first station and an access point to arrive at the method of Claim 1. (Office Action at 4). Applicant respectfully traverses the rejection of Claim 1 for at least the following **four (4)** reasons.

First, none of the cited references discloses "determining a second distance between the first station and an access point in the wireless local area network" for purposes of establishing communications as is recited in Claim 1. While the Office Action cites to Moore as teaching this recitation of Claim 1, what Moore in fact teaches is that a computer that is already connected to a wireless network can estimate its location by measuring the received signal strengths of signals being transmitted by several radio access points to approximate the distance from the computer to **each** radio access point, and then performing a **triangulation process** using these approximated distances and the known locations of the radio access points in order **to estimate a location of the computer**. (Moore at Col. 29, lines 59-67). One of skill in the art clearly would not have looked to Moore to modify the method of Wellig as further modified by Grube in the Office Action, as Moore is directed to location finding techniques and merely estimates the distance to an access point as part of such location finding techniques. The only possible basis for modifying Wellig and Grube based on Moore is hindsight based on the teachings of the present application.

Second, none of the cited references disclose or suggest "comparing the first distance to the second distance" as is further recited in Claim 1, where the first distance is the distance between two stations and the second distance is the distance between one of the stations and an access point. In fact, it is conceded that Wellig does not disclose any such comparison, and that Grube only discloses comparing a first distance to a predetermined threshold. While the Office Action correctly notes that Moore discloses approximating a distance to an access

point for purposes of triangulation location techniques, Moore clearly does not teach or suggest comparing that distance to another distance. Thus, the failure of the cited art to disclose or suggest the "comparing the first distance to the second distance" recitation of Claim 1 provides a second, independent reason for withdrawal of the rejection of Claim 1.

Third, none of the cited references disclose "establishing direct link protocol communications between the first station and the second station **if the first distance is less than the second distance,**" as is recited in the last clause of Claim 1. Instead, Grube compares the distance between communication units to a predetermined threshold such as, for example, the direct mode transmission range of the units, while Moore has nothing to do with either establishing direct link protocol communications or comparing distances. (See Grube at Col. 3, lines 17-28; Moore at Col. 29, lines 59-67). Accordingly, the rejection of Claim 1 should also be withdrawn for this reason.

Fourth, Applicant respectfully submits that the pending rejection clearly fails to qualify as a *prima facie* rejection under 35 U.S.C. § 103 based on the requirements for a Section 103 rejection set forth in the Manual of Patent Examining Procedure ("MPEP"). While the following showing of this point is lengthy – and Applicant apologizes for the extended discussion that is necessary on this point – the requirements in the MPEP clearly highlight the deficiencies of the present rejection,

In particular, MPEP § 2143 sets forth seven "exemplary rationales" that may support a conclusion of obviousness subsequent to the Supreme Court's decision in *KSR International Co. v. Teleflex Inc.*, 550 U.S. \_\_\_\_ (2007), and then explains the showing that must be made for each of these rationales in order to make out a *prima facie* case of obviousness under 35 U.S.C. § 103(a). The seven rationales listed in Section 2143 are as follows:

1. Combining prior art elements according to known methods to yield predictable results;
2. Simple substitution of one known element for another to obtain predictable results;
3. Use of known technique to improve similar devices (methods, or products) in the same way;
4. Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
5. "Obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

6. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; and
7. Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

MPEP § 2143 then proceeds to set forth the showing that must be made under each of these rationales to make out a *prima facie* case of obviousness. While the Office Action is not clear as to which of the above rationales is being used to support the pending rejections, it is at least clear that the rejection is not based on rationales 3, 5 or 6 above. Moreover, as shown below, it is also clear that the Office Action fails to make the showing that is required for any of the remaining rationales. As such, Applicant respectfully submits that a *prima facie* showing of obviousness has not and cannot be made, and hence the rejection of Claim 1 should be withdrawn on this additional basis.

1. Rationale 1 – Combining Prior Art Elements According to Known Methods To Yield Predictable Results

According to MPEP § 2143, to reject a claim based on this rationale, the Examiner "must [first] resolve the *Graham* factual inquiries." Then, Office personnel must articulate the following:

- (1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference;
- (2) a finding that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that **in combination, each element merely performs the same function as it does separately;**
- (3) a finding that one of ordinary skill in the art would have recognized that the results of the combination were predictable; and
- (4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

(MPEP § 2143) (emphasis added). Here, the pending rejection does not include any resolution of the *Graham* factual inquiries, nor does it include any showing under at least items 2-4 above. In fact, it is clear that no showing could be made that "one skilled in the art

could have combined the elements as claimed by known methods **with no change in their respective functions**" as is required by MPEP § 2143, as the rejection combines bits and pieces of disclosures of disparate references that are performed for completely different purposes in a hindsight effort to recreate the teachings of Claim 1. For example, here, the function of the distances determined in Moore between a computer and several access points is to **determine the location of the computer using triangulation techniques**. The pending rejection, however, takes this teaching and attempts to apply it to a completely different function. This is not permissible, and the rejection of Claim 1 clearly cannot be supported under this rationale.

2. Rationale 2 – Simple Substitution of One Known Element for Another To Obtain Predictable Results

According to MPEP § 2143, to "reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Then, Office personnel must articulate the following:

- (1) a finding that the prior art contained a device (method, product, etc.) which differed from the claimed device by the substitution of some components (step, element, etc.) with other components;
- (2) a **finding that the substituted components and their functions were known in the art;**
- (3) a finding that one of ordinary skill in the art **could have substituted one known element for another**, and the results of the substitution would have been predictable; and
- (4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness."

(MPEP § 2143) (emphasis added). Once again, the pending rejection here does not include any resolution of the *Graham* factual inquiries, nor does it include any showing under at least items 2-4 above. In fact, it is clear that the rejection is not based on the **substitution** of steps from the method of Wellig with other steps from the secondary references. Instead, the rejection **adds** teachings from two disparate secondary references to Wellig. These additions are not substitutional in any sense, but instead take steps that were performed in secondary references for completely different purposes and adds/changes the steps of Wellig based on these disparate teachings. The Office Action provides no finding that "one of ordinary skill

in the art could have substituted one known element for another, and the results of the substitution would have been predictable" as required by Section 2143, nor could any such showing be made, as the changes are not substitutional nor are the results predictable. As such, this rationale also cannot be used to support the pending rejections.

3. Rationale 4 – Applying a Known Technique to a Known Device  
(Method, or Product) Ready for Improvement To Yield Predictable  
Results

According to MPEP § 2143, to "reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Then, Office personnel must articulate the following:

- (1) a finding that the prior art contained a "base" device (method, or product) upon which the claimed invention can be seen as an "improvement;"
- (2) a finding that the **prior art contained a known technique that is applicable to the base device** (method, or product);
- (3) a finding that one of ordinary skill in the art would have **recognized that applying the known technique would have yielded predictable results** and resulted in an improved system; and
- (4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness."

(MPEP § 2143) (emphasis added). Once again, the pending rejection here does not include any resolution of the *Graham* factual inquiries, nor does it include any showing under at least items 2-4 above. For example, the pending rejection does not – and in fact cannot – show that "the prior art contained a known technique that is applicable to the base device" as required by item (2) above as the teachings taken from the secondary references had nothing to do with potential "improvements" to the base method of Wellig. In particular, the "teaching" taken from Moore involves approximating a distance to an access point for purposes of triangulation; this obviously has nothing to do with the cited portions of Wellig which involve establishing direct link protocol communications connection. Similarly, the technique of Grube involves comparing a distance between two terminals to a predetermined threshold such as, for example, **the direct mode transmission range of the units**. (See Grube at Col. 3, lines 17-28). However, this "known" technique of Grube is not what is recited in Claim 1. Instead, Claim recites comparing (a) the distance between two stations

and (b) a distance between an access point and one of the stations. Thus, the Office Action has not and cannot show that the combination of references involves applying a known technique to a known method.

4. Rationale 7 – Some Teaching, Suggestion, or Motivation in the Prior Art That Would Have Led One of Ordinary Skill To Modify the Prior Art Reference or To Combine Prior Art Reference Teachings To Arrive at the Claimed Invention

According to MPEP § 2143, to "reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Then, Office personnel must articulate the following:

- (1) a finding that there was some **teaching**, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, **to modify the reference** or to combine reference teachings;
- (2) a finding that there was reasonable expectation of success; and
- (3) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness."

(MPEP § 2143) (emphasis added). Applicant respectfully submits that the pending rejection also fails to comply with the requirements of this section of Section 2143. In particular, the rejection does not include any resolution of the *Graham* factual inquiries, nor does it include a "finding that there was some teaching, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings" as required by item (1) above. Instead, the Office Action simply conclusively states that it would have been obvious to modify the references as stated in the rejection "in order to ensure the signal quality of direct mode while efficiently utilizing the wireless local area network resource." No support whatsoever is provided for this assertion as is explicitly required by Section 2143. There likewise is no showing that "a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and that there would have been a reasonable expectation of success" as is further required by Section 2143 and the cases cited therein. As such, the pending rejection also clearly fails to meet the requirements for a Section 103 rejection under this final rationale.



Thus, for all of the above reasons, Applicant respectfully submits that the Office Action has not and cannot show that the cited combination of Wellig, Grube and Moore render Claim 1 obvious.

C. The Rejections of Claims 2-15

Claims 2-15 each depend from Claim 1 and hence are patentable over the cited art at least as depending from a patentable base claim. In addition, Applicant respectfully submits that at least Claims 2-3, 7, 9-10, 12 and 14 are independently patentable over the cited art.

In particular, Claim 2 recites "establishing direct link protocol communications between the first station and the second station if the first distance is less than a predetermined multiple of the second distance." Claim 3 recites that "the predetermined multiple is two." The Office Action states that it would have been obvious to further modify the method of Wellig, as modified by Grube and Moore, to arrive at the methods of Claims 2 and 3. The Office Action **fails to cite to any support in the prior art for this assertion**, but instead simply states that the subject matter of Claims 2 and 3 would have been obvious. Applicant respectfully submits that this is insufficient to support a rejection under 35 U.S.C. § 103 as shown by the detailed discussion above regarding the requirements of MPEP § 2143, and hence Claims 2 and 3 are independently patentable over the cited art.

Claim 7 recites that "the location of the first station and the location of the second station are each transmitted to the access point in the wireless local area network in response to a polling request sent by the access point in the wireless local area network." While the Office Action correctly states that Grube discloses that the communication resource controller thereof "determined a distance relationship between the communication units" from "the geographic coordinates of the units' location," Grube clearly does not disclose either the "transmission" or the "polling" recited in Claim 7. Thus, the rejection of Claim 7 should also be withdrawn on these independent grounds.

Claims 9-10 and 12 discuss specific frame characteristics that may be used in embodiments of the present invention. Claim 14 recites that "the location of the first station and the location of the second station that are transmitted to the access point are represented in spatial coordinates." The Office Action states that it would have been obvious to further modify the method Wellig, as modified by Grube and Moore to arrive at the methods of Claims 9-10, 12 and 14. The Office Action fails to cite to any support in the prior art for this

assertion, but instead relies on conclusory assertions that the subject matter of Claims 9-10, 12 and 14 would have been obvious. Applicant respectfully submits that this is insufficient to support a rejection under 35 U.S.C. § 103 – as shown above, for example, in the discussion of MPEP § 2143, and that the rejection of Claims 9-10, 12 and 14 should thus be withdrawn for this independent reason.

**D. The Rejection of Claims 16-18 and 20-23**

Independent Claim 16, as amended, recites:

16. A method of determining whether to route communications between a first station and a second station in a wireless local area network using a direct link protocol, comprising:

determining a distance between the first station and the second station;

determining a distance between the first station and an access point in the wireless area network; and

determining whether to route communications between the first station and the second station in the wireless local area network using the direct link protocol based at least in part on the determined distances,

wherein determining whether to route communications between the first station and the second station in the wireless local area network using the direct link protocol based on at least in part on the determined distances comprises determining that direct link protocol communications will be established between the first station and the second station if the distance between the first station and the second station is less than the distance between the first station and the access point in the wireless area network.

Thus, as amended Claim 16 requires determining if the distance between the first station and the second station is less than the distance between the first station and the access point, which directly corresponds to the last two steps of Claim 1. As such, each of the reasons (discussed above) why the rejection of Claim 1 must be withdrawn apply equally to the rejection of Claim 16, and hence the rejection of Claim 16 should be withdrawn for these reasons.

Claims 17-18 and 20-23 each depend from Claim 16 and hence are patentable over the cited art at least as depending from a patentable base claim. In addition, Applicant respectfully submits that Claims 20 and 21 – which generally correspond to Claims 2 and 3, which are discussed above – are independently patentable over the cited art for the same reasons that Claims 2 and 3 are independently patentable over the prior art.

**E. The Rejection of Claims 24-27**

Independent Claim 24 likewise stands rejected based on the combination of Wellig, Grube and Moore. Applicant respectfully submits, however, that the cited references do not disclose or suggest (1) "a processor that determines . . . a distance between the station and the access point" or (2) that "the processor determines based on the respective distances between the station and the second station in the wireless local area network and between the station and the access point whether to establish direct link protocol communications between the station and the second station in the wireless local area network," as is recited in Claim 24. In fact, as discussed above with respect to the rejection of Claim 1, the cited references teach away from these recitations of Claim 24. As such, the rejection of Claim 24 should be withdrawn for at least these reasons.

Claims 25-27 each depend from Claim 24 and hence are patentable over the cited art at least as depending from a patentable base claim. In addition, Applicant respectfully submits that Claim 27 is independently patentable over the cited art for reasons substantially similar to the reasons, discussed above, that Claim 2 is patentable over the cited art.

**II. Conclusion**

Applicant submits that the claims are patentable for at least the reasons discussed above. Applicant respectfully requests allowance of the claims and passing of the application to issue in due course. Applicant encourages the Examiner to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

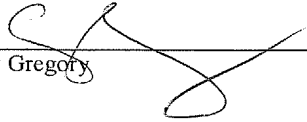


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Carey Gregory